

Claims:

1. A selective synergistic postemergent herbicidal composition for the control of undesired vegetation when applied at a recommended application rate to the locus of the undesired vegetation, said composition comprising as herbicidally active ingredients:

quinclorac herbicide;

a selective herbicidal protox inhibitor; and

a selective herbicidal auxinic agent,

said composition when applied for undesired vegetation control containing sufficient amounts of the quinclorac, the protox inhibitor and the auxinic agent to supply from about 0.1 to about 1 lb/acre of quinclorac, from about 0.005 to about 0.06 lb/acre of the protox inhibitor, and from about 0.15 to about 2 lbs/acre of the auxinic agent.

15 2. A herbicidal composition as set forth in claim 1, wherein the composition as applied for undesired vegetation control contains an amount of quinclorac sufficient to supply from about 0.18 to about 0.75 lb/acre of quinclorac.

20 3. A herbicidal composition as set forth in claim 1, wherein the composition as applied for undesired vegetation control contains an amount of said quinclorac agent sufficient to supply about 0.375 lb/acre of quinclorac.

25 4. A herbicidal composition as set forth in claim 1, wherein the composition as applied for undesired vegetation control contains an amount of the protox inhibitor sufficient to supply from about 0.01 to about 0.05 lb/acre of the protox inhibitor.

5. A herbicidal composition as set forth in claim 1, wherein the composition as applied for undesired vegetation control contains an amount of the protox inhibitor sufficient to supply from about 0.02 to about 0.03 lb/acre of the protox inhibitor.

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6. A herbicidal composition as set forth in claim 1, wherein the composition as applied for undesired vegetation control contains an amount of the auxinic agent sufficient to supply from about 0.25 to about 1.5 lb/acre of said auxinic agent.

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7. A herbicidal composition as set forth in claim 1, wherein the composition as applied for undesired vegetation control contains an amount of the auxinic agent sufficient to supply about 0.75 lb/acre of the auxinic agent.

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8. A herbicidal composition as set forth in claim 1, wherein the protox inhibitor is selected from the group consisting of carfentrazone-ethyl, sulfentrazone, pyraflufen-ethyl, flumioxazin, fluthiacet-methyl and oxyfluorfen.

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9. A herbicidal composition as set forth in claim 1, wherein the protox inhibitor is carfentrazone-ethyl.

10. A herbicidal composition as set forth in claim 1, wherein the protox inhibitor is sulfentrazone.

11. A herbicidal composition as set forth in claim 1, wherein the protox inhibitor is pyraflufen-ethyl.

12. A herbicidal composition as set forth in claim 1, wherein the auxinic
5 herbicidal agent is selected from the group consisting of herbicidally active phenoxy, benzoic, pyridine, quinolinecarboxylic acid compounds, other than quinclorac, and esters and amine and inorganic salts thereof.

13. A selective synergistic postemergent herbicidal composition for the
10 control of undesired vegetation when applied at a recommended application rate to the locus of the undesired vegetation, said composition comprising as herbicidally active ingredients:

quinclorac herbicide; and
a selective protox herbicidal inhibitor,
15 said composition when applied for undesired vegetation control containing sufficient amounts of said quinclorac and the protox inhibitor to supply from about 0.1 to about 1 lb/acre of quinclorac and from about 0.005 to about 0.06 lb/acre of the protox herbicidal inhibitor.

20 14. A herbicidal composition as set forth in claim 13, wherein the composition as applied for undesired vegetation control contains an amount of quinclorac sufficient to supply from about 0.18 to about 0.75 lb/acre of quinclorac.

25 15. A herbicidal composition as set forth in claim 13, wherein the composition as applied for undesired vegetation control contains an amount of quinclorac sufficient to supply about 0.375 lb/acre of quinclorac.

16. A herbicidal composition as set forth in claim 13, wherein the composition as applied for undesired vegetation control contains an amount of the protox inhibitor sufficient to supply from about 0.01 to about 0.05 lb/acre of the protox inhibitor.

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17. A herbicidal composition as set forth in claim 13, wherein the composition as applied for undesired vegetation control contains an amount of the protox inhibitor sufficient to supply from about 0.02 to about 0.03 lb/acre of the protox inhibitor.

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18. A herbicidal composition as set forth in claim 13, wherein the protox inhibitor is selected from the group consisting of carfentrazone-ethyl, sulfentrazone, pyraflufen-ethyl, flumioxazin, fluthiacet-methyl and oxyfluorfen.

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19. A herbicidal composition as set forth in claim 13, wherein the protox inhibitor is carfentrazone-ethyl.

20. A herbicidal composition as set forth in claim 13, wherein the protox inhibitor is sulfentrazone.

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21. A herbicidal composition as set forth in claim 13, wherein the protox inhibitor is pyraflufen-ethyl.

22. A herbicidal composition as set forth in claim 13, wherein the composition contains water and/or an organic-based solvent for herbicidally active ingredients.

5 23. A method of controlling undesired vegetation when applied at a recommended application rate to the locus of the undesired vegetation, said method comprising:

10 applying to the locus of the undesired vegetation, a herbicidally effective amount of a composition comprising as herbicidally active postemergent herbicidal ingredients, quinclorac, a selective herbicidal protox inhibitor, and a selective auxinic herbicidal agent,

15 the composition containing the agent and the inhibitor being applied at a rate sufficient to supply from about 0.1 to about 1 lb/acre of the quinclorac, from about 0.005 to about 0.06 lb/acre of the protox inhibitor and from about 0.15 to about 2 lbs/acre of the auxinic agent.

24. The method of claim 23, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply from about 0.18 to about 0.75 lb/acre of quinclorac.

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25. The method of claim 23, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply about 0.375 lb/acre of quinclorac.

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26. The method of claim 23, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply from about 0.01 to about 0.05 lb/acre of the protox inhibitor.

5 27. The method of claim 23, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply from about 0.02 to about 0.03 lb/acre of the protox inhibitor.

10 28. The method of claim 23, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply from about 0.25 to about 1.5 lb/acre of the auxinic agent.

15 29. The method of claim 23, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply about 0.75 lb/acre of said auxinic agent.

30. The method of claim 23, wherein the protox inhibitor is selected from the group consisting of carfentrazone-ethyl, sulfentrazone, pyraflufen-ethyl, flumioxazin, fluthiacet-methyl and oxyfluorfen.

20 31. The method of claim 23, wherein the protox inhibitor applied to the locus of the undesired vegetation is carfentrazone-ethyl.

25 32. The method of claim 23, wherein protox inhibitor applied to the locus of the undesired vegetation is sulfentrazone.

33. The method of claim 23, wherein protox inhibitor applied to the locus of the undesired vegetation is pyraflufen-ethyl.

34. The method of claim 23, wherein the auxinic herbicidal agent applied
5 to the locus of the undesired vegetation is selected from the group consisting of herbicidally active phenoxy, benzoic, pyridine, quinolinecarboxylic acid compounds, other than quinclorac, and esters and amine and inorganic salts thereof.

35. A method of controlling undesired vegetation, said method comprising:
10 applying to the locus of the vegetation, a herbicidally effective amount of a composition comprising as herbicidally active ingredients, quinclorac herbicide and a selective herbicidal protox inhibitor,
the composition containing the agent and the inhibitor being applied at a rate sufficient to supply from about 0.1 to about 1 lb/acre of the quinclorac
15 and from about 0.005 to about 0.06 lb/acre of the protox inhibitor.

36. The method of claim 35, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply from about 0.18 to about 0.75 lb/acre of said quinclorac.

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37. The method of claim 35, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply about 0.375 lb/acre of said quinclorac.

38. The method of claim 35, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply from about 0.01 to about 0.03 lb/acre of the protox inhibitor.

5 39. The method of claim 35, wherein the composition is applied to the locus of the undesired vegetation at a rate sufficient to supply from about 0.2 to about 0.3 lb/acre of the protox inhibitor.

10 40. The method of claim 35, wherein the protox inhibitor is selected from the group consisting of carfentrazone-ethyl, sulfentrazone, pyraflufen-ethyl, flumioxazin, fluthiacet-methyl and oxyfluorfen.

41. The method of claim 35, wherein the protox inhibitor applied to the locus of the undesired vegetation is carfentrazone-ethyl.

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42. The method of claim 35, wherein protox inhibitor applied to the locus of the undesired vegetation is sulfentrazone.

20 43. The method of claim 35, wherein protox inhibitor applied to the locus of the vegetation is pyraflufen-ethyl.

44. A selective synergistic postemergent herbicidal composition for the control of undesired vegetation when applied to the locus of the undesired vegetation, said composition comprising:

herbicideally effective amounts of the synergistic combination of
5 quinclorac, a herbicidal protox inhibitor, and a herbicidal auxinic compound.

45. A herbicidal composition as set forth in claim 44, wherein the protox inhibitor is selected from the group consisting of carfentrazone-ethyl, sulfentrazone,
10 pyraflufen-ethyl, flumioxazin, fluthiacet-methyl and oxyfluorfen.

46. A herbicidal composition as set forth in claim 44, wherein the protox inhibitor is carfentrazone-ethyl.

15 47. A herbicidal composition as set forth in claim 44, wherein the protox inhibitor is sulfentrazone.

48. A herbicidal composition as set forth in claim 44, wherein the protox inhibitor is pyraflufen-ethyl.

20 49. A herbicidal composition as set forth in claim 44, wherein the auxinic herbicidal compound is selected from the group consisting of herbicidally active phenoxy, benzoic, pyridine, quinolinecarboxylic acid compounds, other than quinclorac, and ester and amine and inorganic salts thereof.

50. A selective synergistic postemergent herbicidal composition for the control of undesired vegetation when applied to the locus of the vegetation, said composition comprising:

herbicidally effective amounts of the synergistic combination of
5 quinclorac and a herbicidal protox inhibitor.

51. A herbicidal composition as set forth in claim 50, wherein the protox inhibitor is carfentrazone-ethyl.

10 52. A herbicidal composition as set forth in claim 50, wherein the protox inhibitor is sulfentrazone.

53. A herbicidal composition as set forth in claim 50, wherein the protox inhibitor is pyraflufen-ethyl.

15 54. A selective synergistic postemergent herbicidal composition for the control of undesired vegetation when applied at a recommended application rate to the locus of the undesired vegetation, said composition comprising as herbicidally active ingredients:

20 quinclorac herbicide; and
a selective herbicidal protox inhibitor;
said composition containing about 0.05 part to about 0.1 part by weight of
protox inhibitor for each part by weight of quinclorac.

55 . A herbicidal composition as set forth in claim 54, wherein is provided about 0.08 part by weight of protox inhibitor for each part by weight of quinclorac.

56. A selective synergistic postemergent herbicidal composition for the control of undesired vegetation when applied at a recommended application rate to the locus of the undesired vegetation, said composition comprising as herbicidally active ingredients:

10 quinclorac herbicide;
 a selective herbicidal protox inhibitor; and
 a selective herbicidal auxinic agent,
said composition containing about 0.05 part to about 0.1 part by weight of protox inhibitor for each part by weight of quinclorac, and about 1 to 4 parts by weight of auxinic agent for each part by weight of quinclorac.

15 57. A herbicidal composition as set forth in claim 56 , wherein is provided about 0.08 part by weight of protox inhibitor for each part by weight of quinclorac

58 . A herbicidal composition as set forth in claim 56, wherein is provided about 2 parts by weight of auxinic agent for each part by weight of quinclorac.

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